



We do the right thing.

The NDAA Section 3116 Waste Determination for F-Tank Farm

A Status

November 15, 2010

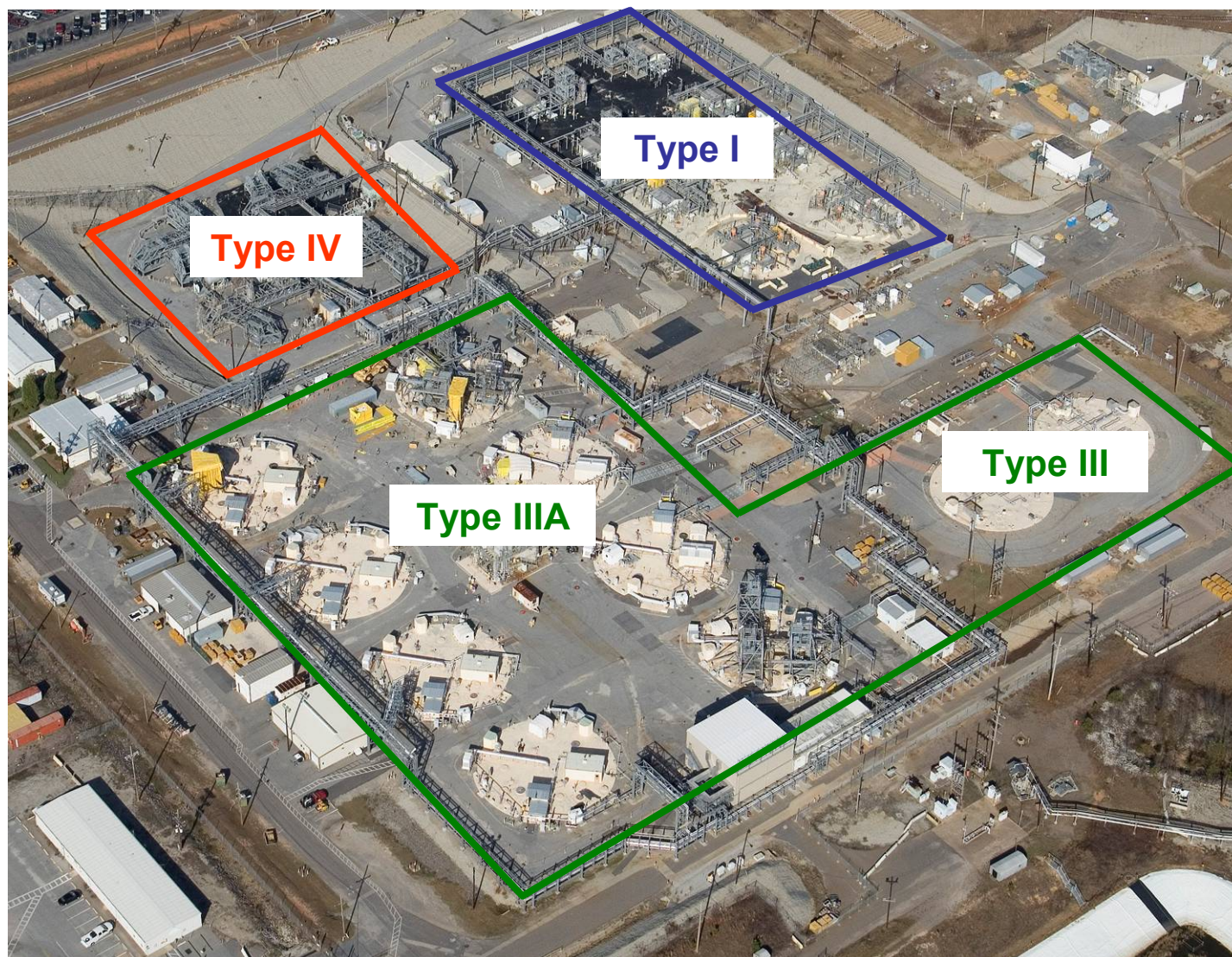
Virginia G. Dickert

Manager, Closure & Waste Disposal Authority

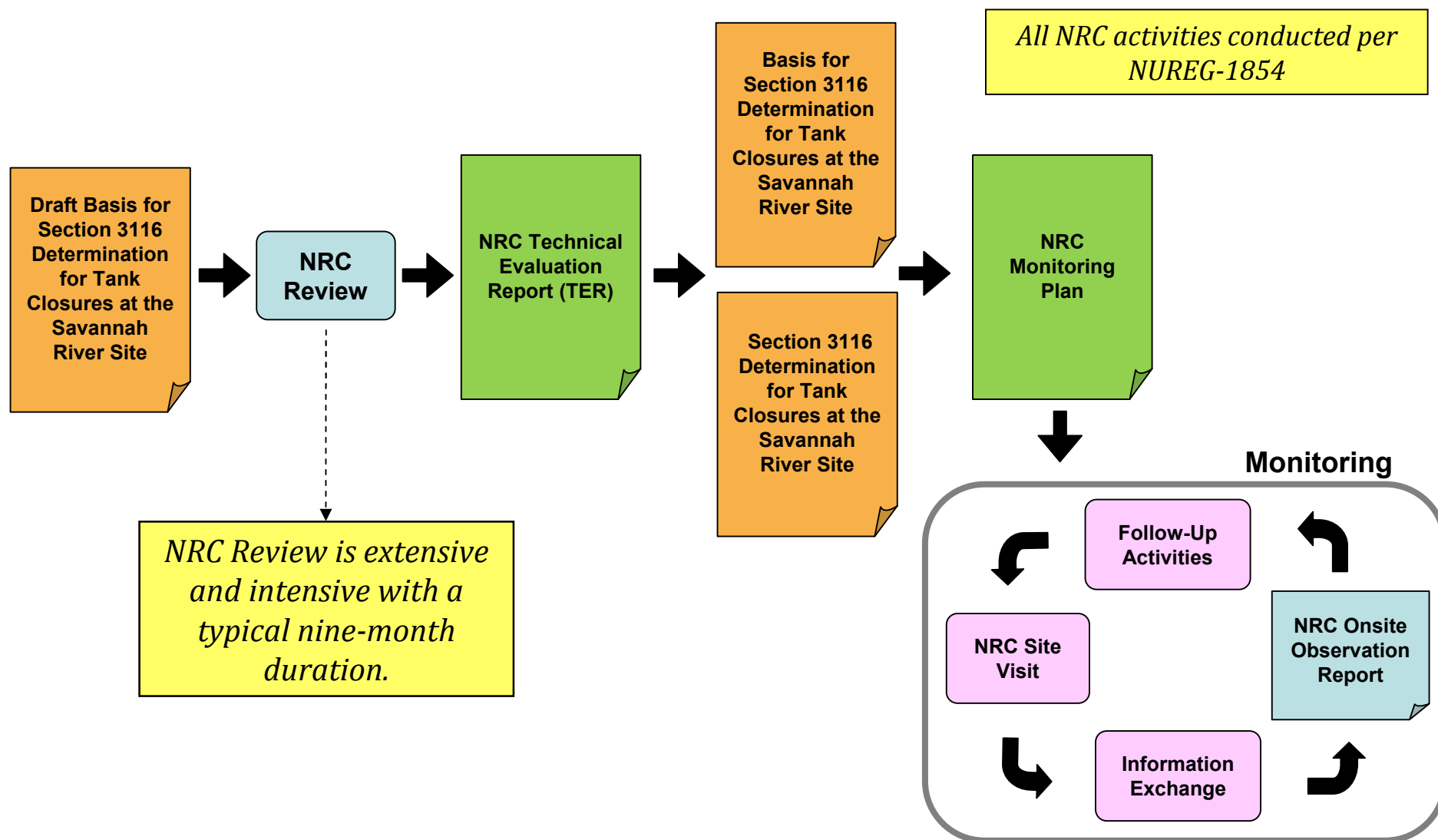
Briefing to the SRS Citizens Advisory Board

SRR-CWDA-2010-001xx

F-Tank Farm



NDAA §3116 Documents



*“To demonstrate and document that, **after final stabilization** activities are complete, the **stabilized residuals** in the FTF waste tanks and ancillary equipment, the waste tanks, and the ancillary structures (including integral equipment) at the time of closure meet the NDAA Section 3116(a) criteria and, therefore, **are not high-level waste**.”*

What it is

Determines that the residuals and associated structures can be managed as low-level waste

What it is NOT

NOT an authorization to dispose of waste or close a decommissioned high-level waste facility

NDAA §3116 (a) Criteria

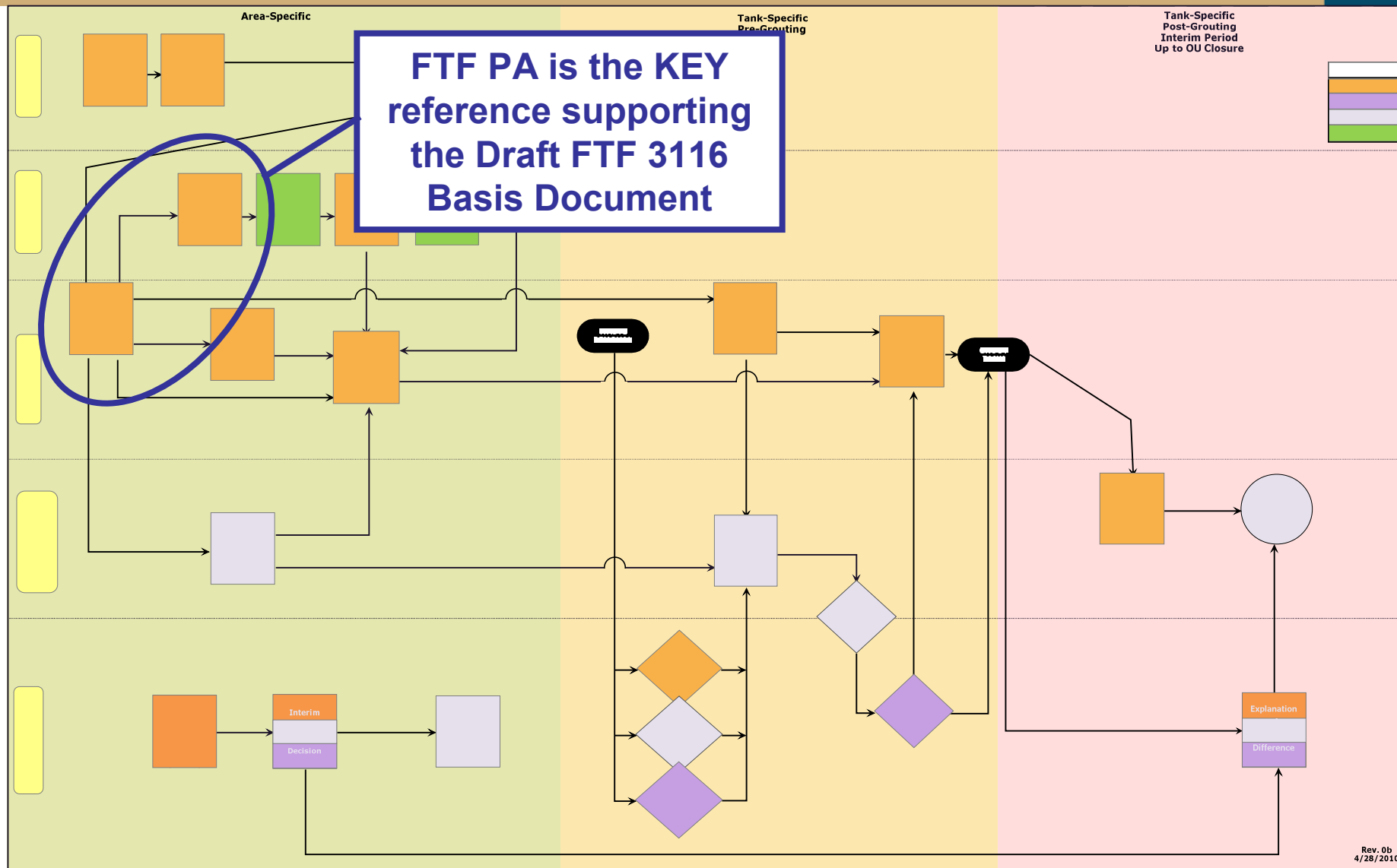
- **Does not require permanent isolation in a deep geologic repository**
- **Had highly radioactive radionuclides removed to the maximum extent practical**
- **(A) Does not exceed concentration limits for Class C low-level waste and will be disposed of:**
 - In compliance with the performance objectives set out in Subpart C of 10 CFR 61
 - Pursuant to a State-approved closure plan or a State-approved permit
- **(B) Exceeds concentration limits for Class C low-level waste and will be disposed of:**
 - In compliance with the performance objectives set out in Subpart C of 10 CFR 61
 - Pursuant to a State-approved closure plan or a State-approved permit
 - Pursuant to plans developed by the Secretary in consultation with the NRC

Basis Document Contents

- 1.0 Introduction and Purpose
- 2.0 Background information on F-Tank Farm
- 3.0 NDAA §3116 Criteria
- 4.0 Basis for not requiring isolation in a deep geologic repository
- 5.1 Basis for identification of Highly Radioactive Radionuclides (HRRs)
- 5.2 Basis for removal to the Maximum Extent Practical (MEP)
- 6.0 Basis for meeting Class C waste concentrations
- 7.0 Basis for meeting the 10 CFR 61, Subpart C performance objectives (61.40 – 61.44)
- 8.0 Description of State-Approved Closure Plan
- 9.0 Conclusion

- Quantifies future risk
 - Demonstrates that the risk over 10,000 years is lower than the risk of a round-trip cross-country airline flight
- Demonstrates the defense-in-depth of engineered barriers
- Provides the sound technical basis to inform the Secretary of Energy's Waste Determination

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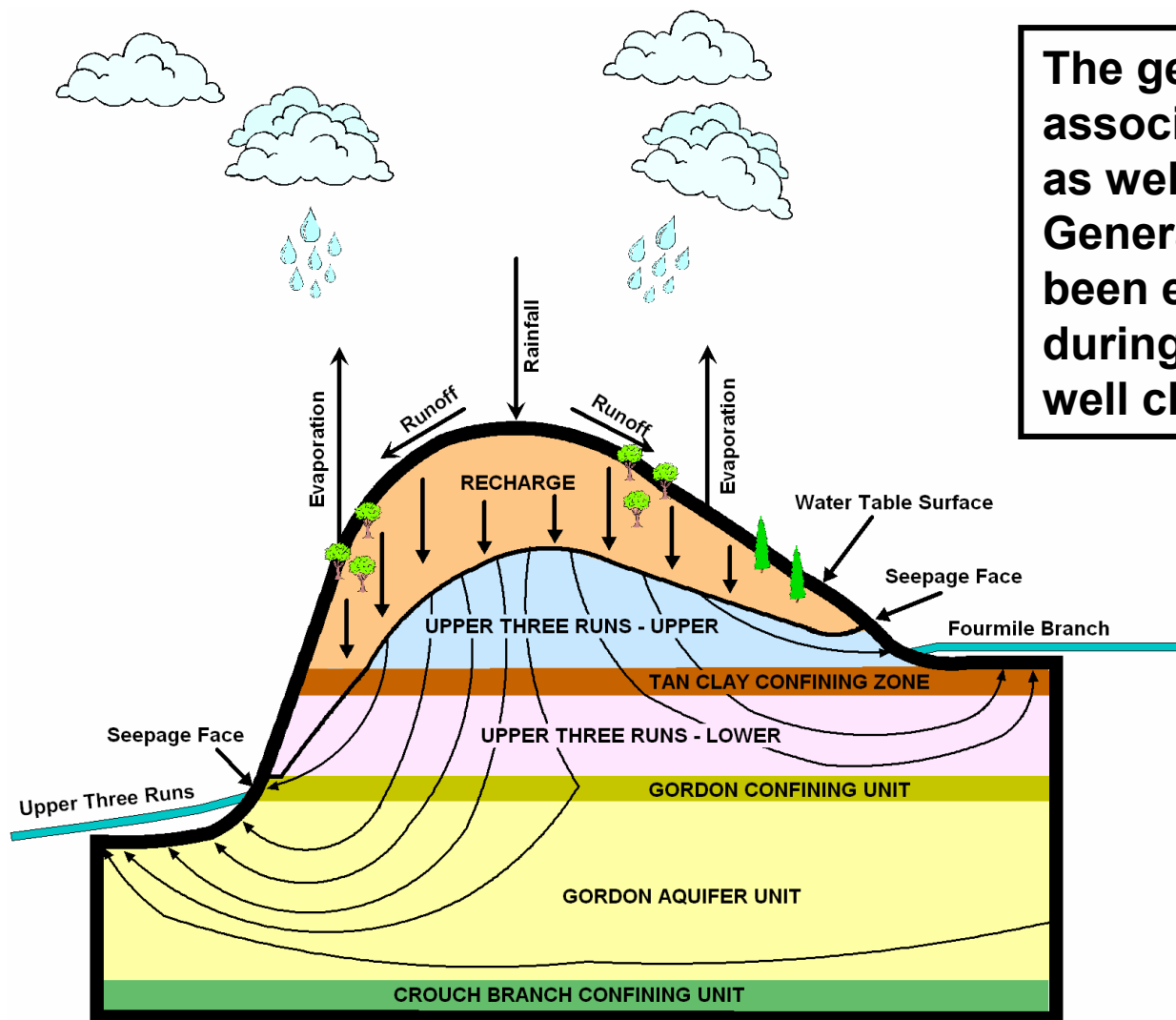


Rev. 0b
4/28/2010

Performance Assessment

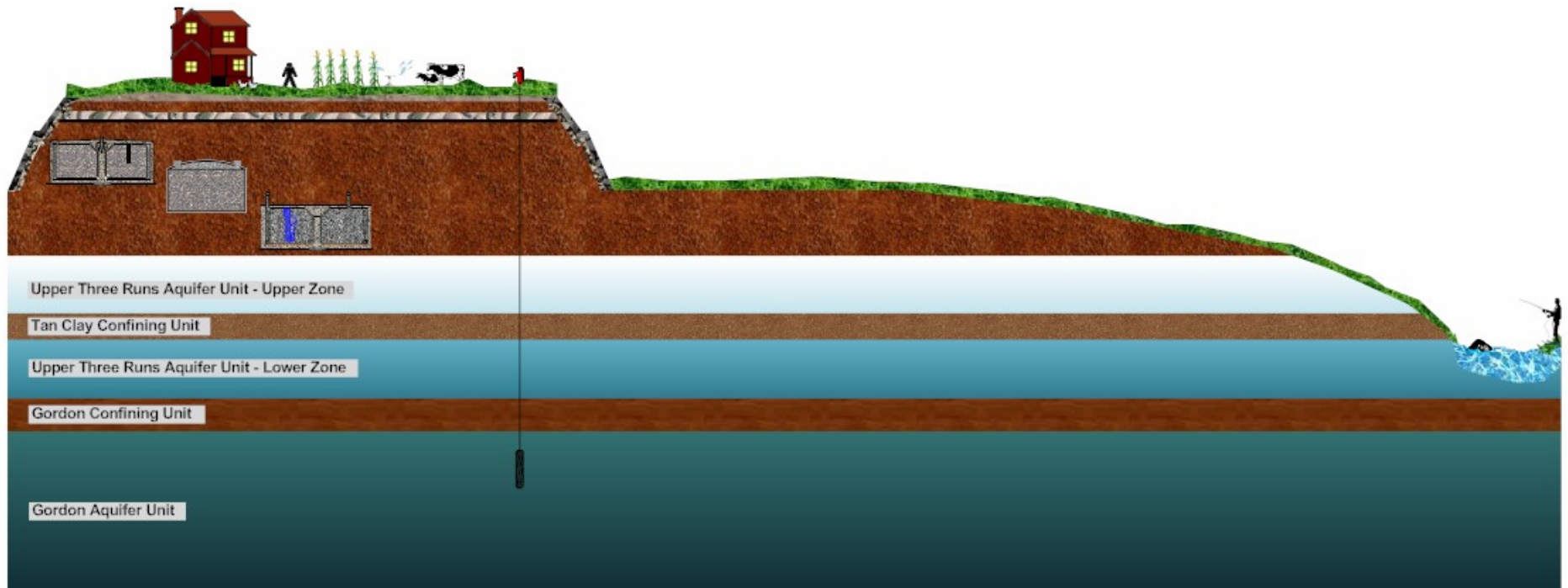
- Single performance assessment (PA) serves as backbone for demonstrating compliance with all performance objectives include NDAA §3116
- PA = a key risk assessment tool used to inform closure and disposal decisions
 - Models fate and transport of materials over long periods of time to determine potential consequences
 - Utilizes informed assumptions
 - Provides most likely consequences of planned actions
- Provides best estimation of what the dose consequences will be, both chemical and radiological, over time
- Reflects uncertainty and identifies key parameters for which the model has the greatest sensitivity (importance)

The geology and hydrogeology associated with F-Tank Farm as well as the surrounding General Separations Area has been extensively studied during the past 60 years and is well characterized.



[NOT TO SCALE]

Modeling Post-Closure

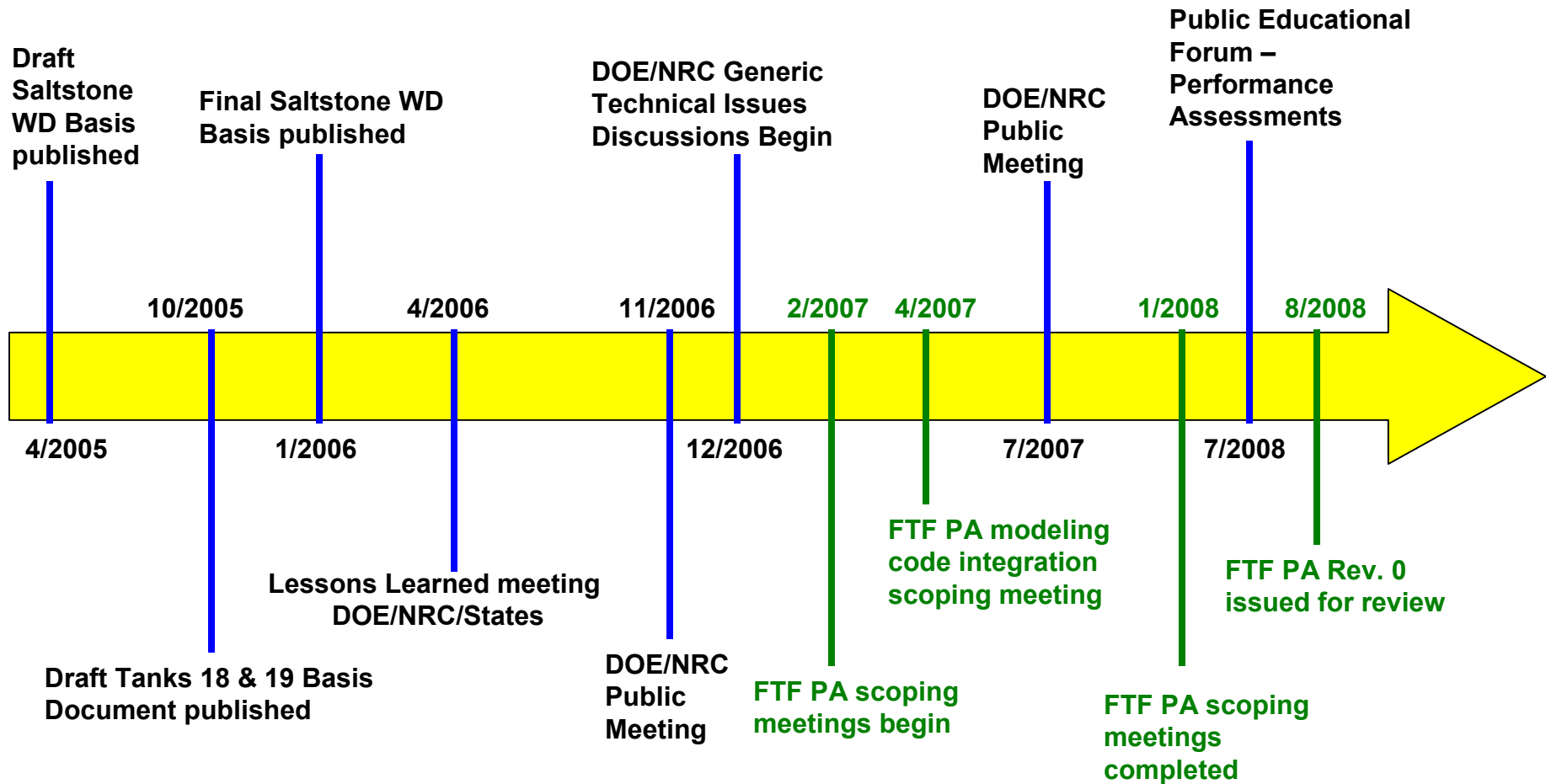


The FTF Performance Assessment models a series of conservative scenarios to understand potential risks associated with planned closure activities.

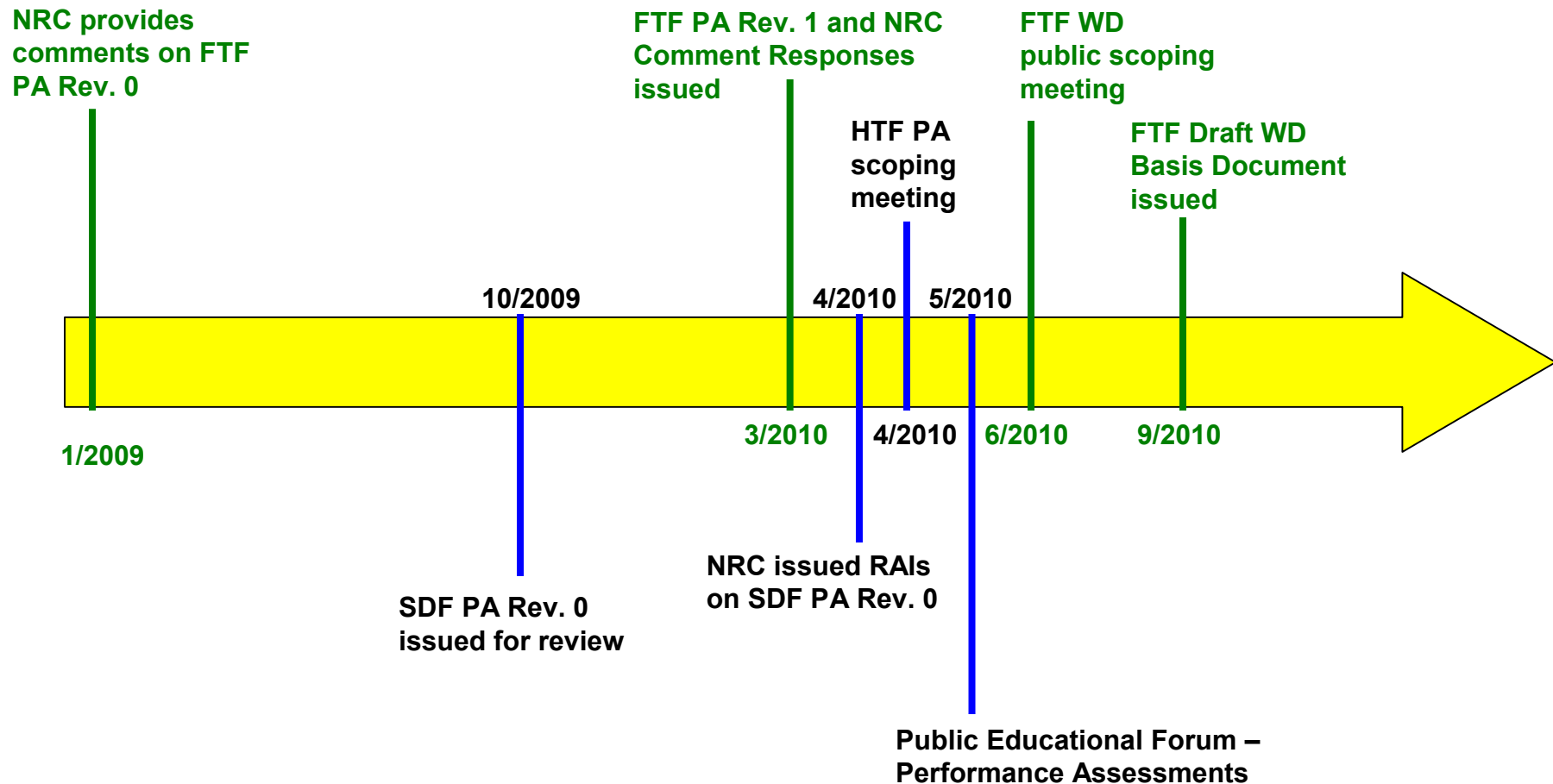


Radiation Dose Perspective

- It is anticipated that the peak annual all-pathways dose from FTF will be **< 5 mrem** during the 10,000-year Compliance Period
 - Over 20,000 years the peak annual dose from FTF closure operations is < 25 mrem
- Per NCRP-160, the average dose to a person in the United States in 2006 was **620 mrem**
 - Approximately 310 mrem from naturally occurring background
 - Approximately 300 mrem from medical procedures
 - Up from 360 mrem in the 1980's due mainly to increases in medical procedures
- A person receives approximately 0.5 mrem/hr for a jet airliner flight
 - Roundtrip flight to the West Coast results in ~5 mrem dose
 - Dream vacation to Europe yields a dose of ~ 10 mrem



SRS WD Journey



In Summary...

- The Draft FTF 3116 Basis Document has been developed and was provided to NRC on 9/30/2010
- The issuance was a culmination of over three years of preparation to maintain the WD “off the critical path”
- It provides confidence that planned FTF closure activities are protective of human health and the environment